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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,306

09/25/2006

John Michael Clarkson

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EXAMINER

RAMDHANIE, BOBBY

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

07/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,306	Applicant(s) CLARKSON ET AL.	
	Examiner BOBBY RAMDHANIE	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/05/2009 has been entered.

Response to Arguments

2. Applicant's arguments filed 05/05/2009 have been fully considered but they are not persuasive. The following reasons are why:

3. Applicants' argue that, "None of the cited prior art therefore teach or suggests, as do the instant claims, a relatively narrow and elongate sample holding portion conjoined directly or indirectly to a wider neck portion.(See remarks filed on 05/05/2009; Page 5)." This argument is unpersuasive because the combination of Korf et al, Lee et al, and Atwood et al disclose the claimed sample vessel (See rejections below).

4. Applicants also argue that the shapes of the sample vessels cited as prior art "do not as efficiently lend to rapid heating and cooling to thereby expedite thermocycling reactions singularly or in parallel (See Remarks filed 05/05/2009; Page 6)." This statement is unpersuasive because this statement is unsupported by factual evidence.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 31, 32, 34-36, & 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korf et al in view of Lee et al (US6312886) and Atwood et al (US5710381).

8. Applicants' claims are toward an apparatus.

9. Regarding Claims 31, 32, 34, & 36, & 39, Korf et al discloses the plastic sample vessel comprising: A). An elongate tubular portion comprising a closed end and a maximum external cross sectional width (See Figure 1); B). An internal sample volume of not more than 100 microliters (See Figure 1; 100 μ L); and C). A tubular external wall of with a thickness (See Figure 1); and D). A neck portion for sample addition comprising an open end having a greater external cross sectional width than said tubular portion (See Figure 1).

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10. Korf et al does not explicitly disclose that that maximum external cross sectional width is 5 millimeters or more 3 millimeters (Claim 39), and that the tubular external wall thickness is 0.01 to 2 mm. Korf et al does however disclose that the tubes are for use with nucleic acids and restrictional digestions.

11. Lee et al discloses a sample vessel for use in PCR technologies for the preparation of nucleic acids in which the maximum external cross sectional width is 5 millimeters and that the tubular external wall thickness is 0.01 to 2 mm (See Column 8 lines 23-31).

12. Atwood et al discloses sample vessels that are used with nucleic acids and, in particular, PCR technology (See Column 5 lines 29-39).

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sample vessel of Korf et al with the specific dimensions of the sample vessel of Lee et al, because according to Atwood et al, the wall thickness of the sample tube used should be as thin as possible so long as it is sufficiently strong to withstand the thermal stresses of PCR cycling and the stresses of normal use (See Atwood et al Column 5 lines 5-11).

14. Additional Disclosures Included: Claim 32: Wherein said vessel is tapered from said sample addition portion to said tubular portion (See Korf et al Figure 1); Claim 34: Wherein said sample addition portion is adapted to receive a cap or stopper on said open end (See Korf et al, Figure 1; See Lee et al, Item 20; lid; and See Atwood et al,

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Figures 1 a & b); and Claim 36: The sample vessel of claim 31 that is made of injection molded plastic (See Atwood et al; Column 5 lines 12 & Lee et al (Column 3 lines 3-11).

15. Regarding Claims 35 & 40, the combination of Korf et al, Lee et al, and Atwood et al discloses the sample vessel according to Claim 31 comprising a truncated conical external surface (See Korf et al Figure 1).

16. The combination does not disclose that the angle between a meridian of the truncated conical external surface and the axis of the cone being in the range of from 0.1 degrees to 10 degrees or more specifically said angle between said meridian of said truncated conical external surface and said axis of said cone is in the range of from 0.2 degrees to 8 degrees. The combination does however disclose that an angle does exist between a meridian of the truncated conical external surface and the axis of the cone.

17. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the angle between a meridian of the truncated conical external surface and the axis of the cone being in the range of from 0.1 degrees to 10 degrees, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

18. Regarding Claims 33 & 38, the combination of Korf et al, Lee et al, and Atwood et al discloses the sample vessel of Claim 31, except wherein the section of tube is explicitly disclosed as a frustoconical shape directly or indirectly adjoining the tubular portion or wherein said tubular portion is longer than said neck portion.

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19. Atwood et al does however disclose that the sample tubes may be modified to the particular heat exchanger used (See Column 5 lines 5-21).

20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify shape of the tube to comprise a section of frustoconical shape directly or indirectly adjoining the tubular portion or wherein said tubular portion is longer than said neck portion in order to fit a different heat exchanger and/or to obtain more surface contact between the tube and the heat exchanger.

21. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Korf et al, Lee et al, Atwood et al, and in further view of Miyamoto et al.

22. Applicants' claims are toward an apparatus.

23. Regarding Claim 37, the combination of Korf et al, Lee et al, and Atwood et al discloses the sample vessel of Claim 36, except wherein it is made of a cyclo-olefin.

24. Miyamoto et al discloses cycloolefin copolymer blends that comprise ethylene and norbornene (See Column 3 line 63 to Column 4 line 8). Miyamoto et al also discloses that these copolymer compositions have industrial applications for containers, bottles, cups, and packaging films (See Column 15 lines 62-67). It would have been obvious to one of ordinary skill in the art at the time the invention to modify the sample vessel of the combination of Korf et al, Lee et al, and Atwood et al, with the copolymer compositions of Miyamoto et al because according to Miyamoto et al, these copolymers result in excellent impact resistance, which would be important for Korf et al because

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the reaction vessels would essentially be required to be durable and withstand temperatures exceeding 50°C (See Korf et al; Abstract).

Telephonic Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BOBBY RAMDHANIE whose telephone number is (571)270-3240. The examiner can normally be reached on Mon-Fri 8-5 (Alt Fri off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. R./

/Walter D. Griffin/

Supervisory Patent Examiner, Art Unit 1797